

Having completely and fully described this invention in the specification, examples and drawings, what is claimed is:

- 5        1.        An abuse-resistant, cast acoustical ceiling tile having a core  
         made from a starch gel and mineral wool fiber composition, wherein  
         the front surface of the tile is coated with aggregate particles having an  
         average particle mean diameter of at least about 1,000 microns.
2.        The ceiling tile of claim 1 wherein the aggregate particles are  
10        selected from the group consisting of calcium carbonate, crushed  
         marble, sand, clay, perlite, vermiculite, crushed stone and glass.
3.        The ceiling tile of claim 2 wherein the aggregate particles are  
         calcium carbonate.
4.        The ceiling tile of claim 3 wherein the aggregate particles have  
         an average particle mean diameter ranging from about 1,000 microns  
15        to about 3,000 microns.
5.        The ceiling tile of claim 3 wherein the aggregate particles have  
         an average particle mean diameter ranging from about 1,400 microns  
         to about 2,500 microns.
6.        The ceiling tile of claim 1 which has a noise reduction  
20        coefficient (NRC) value of at least about 0.50.
7.        The ceiling tile of claim 2 which has a noise reduction  
         coefficient (NRC) value of at least about 0.50.
8.        The ceiling tile of claim 3 which has a noise reduction  
         coefficient (NRC) value of at least about 0.50.
- 25        9.        The ceiling tile of claim 4 which has a noise reduction  
         coefficient (NRC) value of at least about 0.50.
10.       A process for making an abuse-resistant, cast ceiling tile  
         wherein a wet mineral fiber/starch gel pulp is fed to a paper, foil or  
         paper backed foil lined tray from a headbox;

the pulp-filled tray is passed under a hopper which contains aggregate particles;

the aggregate particles are fed from the hopper onto the surface of the wet pulp in the tray so as to provide a uniform layer of aggregate particles across the surface of the wet pulp;

the wet pulp covered by a layer of aggregate particles is passed under a means to press the particles into the pulp; and

then the tray containing the aggregate particle covered wet pulp is passed into a drier.

10 11. The process of claim 10 wherein the aggregate particles are fed from the hopper onto the surface of the wet pulp at a rate ranging from about 0.1 to about 1 pound per square foot of surface.

12. The process of claim 10 wherein the aggregate particles are fed from the hopper onto the surface of the wet pulp at a rate ranging from about 0.2 to about 0.5 pound per square foot of surface.

13. The process of claim 10 wherein the aggregate particles are calcium carbonate.

14. The process of claim 11 wherein the aggregate particles are calcium carbonate.